

Applicants : Michael Wayne Graham and Robert Norman Rice
Serial No. : 10/646,070
Filed : August 22, 2003
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REMARKS

Claims 48, 110, 114 to 136, 138, and 146 to 149 are pending in the subject application and claims 139, 140, 145, and 150 to 152 have been withdrawn. Applicants have not amended, added, or canceled any claims herein.

Claim Support for "double-stranded"

Applicants amended the claims in their July 24, 2008 Amendment and set forth support for the amendments to the claims on page 11, line 11, to page 12, line 12, of the July 24, 2008 Amendment.

In the sentence spanning pages 11 and 12 of the July 24, 2008 Amendment, applicants indicated that "[f]or example, see page 31, lines 3 to 6, of the 2499 Application (referring to blunt-ended fragments); and page 46, lines 13 to 14 (referring to production of plasmid pCR2.BEV.2)". Applicants wish to clarify that "page 46, lines 13 to 14" refers to the specification of the subject application and not to the specification of the 2499 Application.

Furthermore, applicants wish to add the following claim support: page 51, lines 2 to 6, of the specification of the subject application and page 29, lines 20 to 24, of the specification of the 2499 Application (referring to "both strands" of a "structural gene").

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The invention recited in the claims of the subject application is patentably distinct from the subject matter claimed and disclosed by Fire et al. Patent

In their July 24, 2008 Amendment, applicants explained that 1) the Fire et al. provisional does not anticipate applicants' invention requiring an "interrupted palindrome sequence," and 2) that the combination of the Fire et al. Provisional with Dietz or Ladner et al. does not make obvious applicants' claimed invention which requires an "interrupted palindrome sequence." Applicants herein supplement their remarks leading to the aforementioned conclusions and also address a statement made by the Examiner on page 8, lines 19-20 of the January 24, 2008 Office Action.

On page 8, lines 19 to 20, of the January 24, 2008 Office Action the Examiner asserted that U.S. Patent No. 6,506,559 B1, issued January 14, 2003 to Andrew Fire et al. ("Fire et al. Patent¹") claims the rejected invention. The Examiner also asserted that an affidavit or declaration is inappropriate under 37 C.F.R. § 1.131(a) when the reference is claiming the same patentable invention, referencing M.P.E.P. § 2306, on page 8, lines 20 to 22, of the January 24, 2008 Office Action.

Applicants maintain that the invention claimed in the subject application is patentably distinct from the subject matter claimed in the issued Fire et al. Patent; Applicants' claimed invention is also patentably distinct from the subject matter disclosed by the Fire et al. Provisional. Specifically, applicants' claims recite a synthetic gene with, *inter alia*, an "interrupted palindrome sequence." Such a feature is neither claimed nor disclosed by the Fire et al. Patent or by the Fire et

¹ Fire et al. Patent claims the benefit of U.S. Provisional Application No.

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al. Provisional (collectively "Fire et al."). Most importantly, as explained in detail below, applicants' claimed invention incorporating this feature constitutes an unpredictable improvement over the subject matter claimed, as well as the subject matter disclosed, by Fire et al.

It is well settled that there is no interference-in-fact when the claimed invention of one party is patentably distinct from the invention of another party. See, e.g., M.P.E.P. § 2301.03 (8th Ed., 4th Rev., Sept. 2005). Applicants' claimed invention is clearly patentably distinct from claims 1 and 12 of the issued Fire et al. Patent, which are explicitly limited, *inter alia*, to a double-stranded RNA molecule with "separate complementary strands." Because the Fire et al. Patent does not disclose an "interrupted palindrome," applicants' claimed invention is also patentably distinct from the entirety of the disclosure of the Fire et al. Patent, indicating that interfering claims cannot validly be presented in any continuing application of the Fire et al. Patent.

Even *arguendo* under the broadest possible interpretation of the Fire et al. disclosure, applicants' claimed invention would be an undisclosed species. In the July 24, 2008 Amendment, applicants explained that the Fire et al. Provisional does not disclose an "interrupted palindrome sequence." A broad, and least favorable to applicants, interpretation of "transgene" and "expression vector" in the Fire et al. Provisional may lead to the conclusion that the Fire et al. Provisional provides a disclosure that is generic to a double-stranded synthetic gene with an "interrupted palindrome sequence." However, a reference disclosing a genus

60/63,562, filed December 23, 1997 ("Fire et al. Provisional").

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does not anticipate a species not disclosed therein.

Furthermore, the generic disclosure of the Fire et al. Provisional cannot support a claim specifically reciting applicants' improvement of an "interrupted palindrome sequence". Therefore, applicants' claimed invention and the subject matter which the Fire et al. Patent claims or discloses (and therefore could validly claim) are patentably distinct.

Moreover, applicants' claimed synthetic gene with an interrupted palindrome sequence is an unpredictable improvement over Fire et al. and the prior art. On page 59, lines 27 to 29, the specification of the subject application reports on an experiment evidencing the unpredictable improvement resulting from the use of an interrupted palindrome:

"[a]ll attempts to create direct palindromes of PVY sequences failed, presumably such sequence arrangements are unstable in commonly used *E. coli* cloning hosts. Interrupted palindromes however proved stable." (Emphasis added)

Applicants were the first to disclose that direct palindromes were unstable, and that use of an interrupted palindrome sequence overcomes the stability problem in the context of applicants' invention. Therefore, synthetic genes as claimed having an interrupted palindrome sequence are an unpredictable improvement over the prior art.

Accordingly, applicants' claimed invention reciting an interrupted palindrome sequence is patentably distinct from the art cited in the January 24, 2008 Office Action.

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SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

In accordance with the duty of disclosure under 37 C.F.R. § 1.56, applicants direct the Examiner's attention to the following references which are listed on the Form PTO-1449 (Substitute) attached hereto as Exhibit A:

1. U.S. Patent Publication No. 2003-0051263 A1, published March 13, 2003 (Andrew Fire et al.);
2. U.S. Patent Publication No. 2003-0055020 A1, published March 20, 2003 (Andrew Fire et al.);
3. U.S. Patent Publication No. 2008-0050342 A1, published February 28, 2008 (Andrew Fire et al.);
4. U.S. Patent Publication No. 2008-0081373 A1, published April 3, 2008 (Andrew Fire et al.);
5. U.S. Patent Publication No. 2008-0248576 A1, published October 9, 2008 (Andrew Fire et al.);
6. Pending claims for U.S. Serial No. 10/282,996, filed October 30, 2002;
7. Pending claims for U.S. Serial No. 10/283,190, filed October 30, 2002;
8. Pending claims for U.S. Serial No. 10/283,267, filed October 30, 2002;

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9. Pending claims for U.S. Serial No. 11/826,385, filed July 13, 2007;
10. Pending claims for U.S. Serial No. 11/905,368, filed September 28, 2007; and
11. Pending claims for U.S. Serial No. 11/905,449, filed October 1, 2007.

The Examiner is respectfully requested to make these references of record in the above-identified application by initialing and returning a copy of the enclosed Form PTO-1449 (Substitute).

Copies of items 1 to 5, all U.S. Patent Application Publications, have not been included as Exhibits in accordance with 37 C.F.R. § 1.98(a)(2)(ii). Items 6 to 11 are available to the Examiner on PAIR.

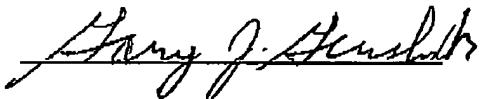
This Supplemental Information Disclosure Statement is being filed after the period specified in 37 C.F.R. § 1.97(b). The required fee set forth in 37 C.F.R. § 1.17(p) for such an Information Disclosure Statement was paid with applicants' July 24, 2008 Information Disclosure Statement, to which this is a supplement.

If a telephone interview would be of assistance in advancing prosecution of the subject application, applicants' undersigned attorney invites the Examiner to telephone him at the number provided below.

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No fee is deemed necessary in connection with the filing of this
Supplemental Communication and Supplemental Information
Disclosure Statement. However, if any fee is required
authorization is hereby given to charge the amount of any such
fee to Deposit Account No. 03-3125.

Respectfully submitted,



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EXHIBIT A